

## CLAIMS

REPLACED BY  
ART 34 AMDT

1. A method of growing a p-type nitride semiconductor material by molecular beam epitaxy, the method comprising supplying bis(cyclopentadienyl)magnesium ( $\text{Cp}_2\text{Mg}$ ) during the growth process.
2. A method as claimed in claim 1 wherein the nitride semiconductor material is p-type  $(\text{Ga},\text{Al})\text{N}$ .
3. A method as claimed in claim 1 or 2 and comprising supplying ammonia gas during the growth process.
4. A method as claimed in claim 1, 2 or 3 and comprising supplying ammonia gas, gallium and  $\text{Cp}_2\text{Mg}$  to a growth chamber, thereby to grow a layer of p-type GaN.
5. A method as claimed in claim 1, 2 or 3 and comprising supplying ammonia gas, aluminium, gallium and  $\text{Cp}_2\text{Mg}$  to a growth chamber, thereby to grow a layer of p-type AlGaN.
6. A method as claimed in any preceding claim, and comprising changing the supply rate of  $\text{Cp}_2\text{Mg}$  during the growth of the nitride semiconductor material.
7. A method as claimed in any preceding claim wherein the growth process is carried out at a temperature of at least  $700^\circ\text{C}$ .
8. A method as claimed in any preceding claim wherein the growth process is carried out at a temperature of at least  $800^\circ\text{C}$ .
9. A method as claimed in any preceding claim wherein the growth process is carried out at a temperature of at least  $850^\circ\text{C}$ .